The American Fertilizer

Vol. 96 JANUARY 17, 1942 No. 2

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Vol. 96 JANUARY 17, 1942 No. 2

Wickard Calls for Largest Farm Production in History

SECRETARY of Agriculture, Claude R. Wickard on January 16th announced revised goals for farm production in 1942 substantially larger than the record output called for in the goals announced in the fall of 1941. At the same time he announced new policies with respect to loans, purchases, and sales of Government-held stocks which should stimulate the production of maximum supplies of the commodities most needed in the war effort.

"The new 1942 goals, revised in view of Pearl Harbor," Secretary Wickard stated, "call for the greatest production in the history of American agriculture, and for putting every acre of land, every hour of labor, and every bit of farm machinery, fertilizer, and other supplies to the use which will best serve the nation's war time needs.

"The coming production season is the most crucial in the history of American agriculture. To American farmers, the nation looks for enough production this year to feed and clothe our own people for their war time task. To American farmers, the United Nations look for indispensable supplies of food and fiber for their people and fighting forces. No one can foresee the exact size of the needs of our allies a year from now, but already we know they will be large, and I fear they will be larger than we realize at this time.

"Some of these goals will be very difficult to reach but we believe farmers can do it despite war time shortages, of farm labor, machinery, and production supplies. For wheat, cotton, and tobacco, the goals should not be exceeded. To do so would waste precious labor and supplies. For the other commodities, if farmers are able to exceed the goals and processors can handle the products, the nation's interests would be served. In a word, we must produce to the limit in 1942 the things where shortages may occur under war time conditions, because if the war is a long one, it will become progressively more difficult to get production.

"More than a year ago, we began the effort to step up production of the crops and livestock needed to supply ourselves and the British. Throughout 1941 we continued efforts to increase production and we changed our programs to help farmers raise more. Farmers responded magnificently. The 1941 farm production was the largest on record.

War Increases Goals

"Now with the nation in war, and serving as both the food store and the arsenal for the United Nations, we call on farmers for redoubled effort. We are throwing all the resources of the Government agricultural programs into helping them do their war time job. Every program is being realized to make it serve the single purpose of speeding production.

"The goals place particular emphasis on the production of oil bearing crops such as peanuts and soybeans so that our supplies of oils and fats may not be reduced too drastically, even though importations from the Far east are cut off.

"We are increasing the goals for corn by five million acres in order to have plenty of grain to continue the expansion in meat, dairy, and poultry production now well under way. In order to expand feed supplies in certain areas and to provide storage space for the new wheat crop, we also are making arrangements to release Government-owned wheat for feeding at prices comparable with corn.

"The goals call for an increase in dry edible beans and dried peas. An additional 5 million

bushels of rice are called for. Provision is made for an increase over 1941 of more than 18 million cases in the pack of canned fruits and vegetables."

Fats and Oils

To increase the production of fats and oils a number of steps are announced. The goal for soybeans is raised to 9 million acres; flaxseed, 4½ million acres; and peanuts, 5 million acres. To encourage this production, price and loan supports will be employed, including a loan on flaxseed averaging at least $2.10 per bushel farm basis with location and grade differentials; purchases of soybeans at $1.60 a bushel, farm basis, for designated varieties of U. S. No. 2 Yellow, with location and grade differentials, and Government purchases of peanuts at $82 a ton for U. S. No. 1 White Spanish Type for oil, delivered at the approved local receiving agency, with location and grade differentials. The purchase price for No. 1 Runners will be $78 a ton and $70 a ton for Class A Virginias. Efforts will be made to step up the production of lard, tallow and grease in packing plants.

Livestock and Feeds

To increase the supply of animal feeds, corn goals and corn acreage allotments are raised 10 per cent and there will be no marketing quotas on corn this year.

Corn producers in the commercial corn area who wish to exceed their acreage allotments by planting up to their usual acreage in order to have more feed may do so without incurring reduction in other payments. This will be especially helpful in the dairy areas.

To release storage space for the 1942 wheat crop and as a further aid to necessary livestock production, a program will be announced shortly providing for the conversion of Ever-Normal Granary wheat into livestock and poultry feed.

Farmers are increasing their hog and chicken numbers to such an extent that it will be possible to turn the additional feed supplies into larger quantities of meat, lard and eggs than was thought possible four months ago when the first goals were announced. The revised goals call for an increase of four million head in hogs marketed, and 200 million dozen eggs over the September, 1942 goals. The increased feed supplies also will help to attain the goals set for meats and for milk marketing and production. The price supporting program announced last fall for hogs, eggs, evaporated milk, dry skim milk, cheese, and chickens (excluding broilers) continues in effect. Under this program prices are supported at a minimum of 85 per cent of parity.

Because of ample supplies, wheat and rye acreage remain at the level of the September goals. All restrictions on rice acreage have been removed; and the goal has been raised 120,000 acres. This will provide for a substantial increase in rice production in 1942.

Vegetables

The goal for dry beans is 13 per cent above 1941 acreage and for dry edible peas the goal is 73 per cent more than in 1941. Prices will be supported at not less than $4.75 per hundredweight for U. S. No. 1 Pea beans and Medium White, Great Northern, California Small White, Pink and Pinto beans and not less than $5.25 per hundredweight for U. S. No. 1 dry peas of designated varieties, in bags, f.o.b. cars at country shipping points. No. 2 grades will be supported at a slightly lower level.

The revised acreage goal for canning vegetable crops is expected to result in a pack 45 per cent above the 1936-40 average, and a program has already been announced for obtaining an increase of more than one-fifth over the 1941 pack of canned peas and tomatoes. The indications are that production of vegetables for fresh use in 1942 will show an increase over 1941 production.

The canned fruit is expected to be 4 million cases larger than in 1941. Dried fruit production is expected to be 100,000 tons larger than in 1941.

The potato goal provides for increases in planted acreage over 1941 and a price supporting program is to be announced.

Tobacco and Cotton

Revised goals for all types of tobacco except cigar wrapper are higher than those established in September.

It is expected that cotton acreage will be about a million acres larger than was anticipated in September. To increase production of long-staple cotton special premiums will be offered on staples of 1⅛ and over.

There will be no limitation on plantings of sugar beets and sugarcane in 1942.

Summing up the job ahead for American agriculture Secretary Wickard commented: "This is an all-out program difficult of attainment, but in the nation-wide farm canvass recently completed, farmers have already indicated that they plan to equal or exceed the production called for in most of the goals announced in September.

"The Department of Agriculture, through the management of its programs, and through cooperation with the other agencies of Government whose work touches the farmers' problems of labor, supply, and price, will do its utmost to bring farmers all possible aid in getting the job done. Adequate farm production is vital to the nation's existence, and the task of achieving it will command the energy and devotion of every farm family."

Table I compares the revised goals for 1942 crops with the goals announced last September and the corresponding acreage for 1941.

In addition to the goals for the commodities just listed, the expected acreage of other crops was also announced. These are the acreages which it is expected will be planted or produced in 1942 in view of the current supply and price outlook. In general, it is believed that adequate acreages or supplies of these crops will be obtained without any special encouragement or additional price support.

Table II compares the expected acreages with the forecasts of last September and the accompanying data for 1941.

Table I

Commodity	Thousands of Acres 1941	September Goal	Revised Goal	Per Cent 1941
Corn	87,164	87.5 to 90,000	92.5 to 95,000	108
Cotton*	23,250	22 to 24,000	25,000	108
Wheat	62,400	50 to 55,000	55,000	88
Tobacco:				
Flue-cured	732	762	843	115
Burley	357	358	383	107
Other domestic	261	247	272	104
Rice	1,245	1,200	1,320	106
Sugarcane	265	(No acreage restrictions in 1942)		
Sugar beets	775	(No acreage restrictions in 1942)		
Dry beans**	2,304	Same as 1941	2,600	113
Dry field peas	384	....	665	173
Canning peas	28,700	....	38,000	132
Canning tomatoes	34,000	....	40,000	118
Farm gardens	4,431	About 5,760	About 5,760	130
Cover crop seed	265	415	415	157
Soybeans	5,855	7,000	9,000	154
Flaxseed	3,367	Same as 1941	4,500	131
Peanuts†	1,964	3,500	5,000	255

* Within this acreage, a shift toward the production of longer staples will be encouraged in the areas where such cotton can be produced.

** Goal for dry beans is increased acreage for white, pink and pinto beans, other varieties about the same acreage as in 1941.

† Goal for peanuts is about 1,600,000 acres for nuts, or same as 1941, and 3,400,000 acres for oil.

Table II

Commodity	Thousands of Acres 1941	September Estimate	January Estimate	Per Cent 1941
Hay crop seed	3,923	....	4,919	125
Oats	39,363	40,000	40,000	102
Barley	15,080	About 14,375	16,000	106
Rye	3,500	Same as 1941	3,550	101
Grain sorghum	9,397	9,375	10,000	106
All hay	71,893	74 to 75,000	72,000	100
Potatoes	2,793	About 3,060	About 3,060	110
Sweet potatoes	843	About 850	About 850	101
Fresh vegetables:				
Comm. truck	1,680	About 1,785	About 1,840	110
Market gardens	1,065	About 1,075	About 1,075	101
Canning vegetables	Other than peas and tomatoes, about same as 1941.			
Fruit	Total production about same as 1941. Fruit production cannot be easily increased, and emphasis should be on prevention of waste and better distribution of utilization as between fresh, dried, and canned.			

Allocation Plan for Nitrate of Soda

General Preference Order No. M-62 to Conserve the Supply and Direct the Distribution of Sodium Nitrate

ON January 15th, Donald M. Nelson, Director of Priorities, issued a General Preference Order covering the distribution of nitrate of soda. On the following day, Herbert H. Meyers, Director of the Nitrogen Unit prepared a letter to the fertilizer industry outlining the program for the conservation of this important fertilizer material.

The text of the General Preference Order and of Mr. Meyers' letter is as follows:

General Preference Order No. M-62 to Conserve the Supply and Direct the Distribution of Sodium Nitrate

Whereas, the national defense requirements have created a shortage of Sodium Nitrate, as hereinafter defined, for defense, for private account, and for export and it is necessary, in the public interest and to promote the defense of the United States, to conserve the supply and direct the distribution thereof:

Now, therefore, it is hereby ordered, That:

Sec. 1039.1 General Preference Order M-62 —(a) Definitions. For the purposes of this Order:

(1) "Sodium nitrate" means the commercial material containing up to 16.47% nitrogen, from whatever source derived, known as nitrate of soda.

(2) "Producer" means any person engaged in the production of sodium nitrate and includes any person who has sodium nitrate produced for him pursuant to toll agreement.

(3) "Distributor" means any person who has purchased or purchases sodium nitrate for purposes of resale or acts as a sales agent for any person engaged in the production or sale of sodium nitrate.

(b) Applicability of Priorities Regulation No. 1. This Order and all transactions affected thereby are subject to the provisions of Priorities Regulation No. 1, as amended from time to time, except to the extent that any provision hereof may be inconsistent therewith, in which case the provisions of this Order shall govern.

(c) Assignment of preference rating to certain defense orders. Deliveries under all defense orders which have not been assigned a higher preference rating are hereby assigned a preference rating of A-10.

(d) Restrictions on deliveries. On and after February 1, 1942, no sodium nitrate may be delivered to any person by a producer or a distributor, except as may be specifically directed by the Director of Priorities; and no person shall accept delivery of sodium nitrate in violation of the foregoing clause. At the beginning of each calendar month the Director of Priorities will issue to all producers and distributors specific directions covering deliveries of sodium nitrate which may be made by such producers or distributors during such month. Such directions will be made primarily to insure the satisfaction of all defense requirements and to provide an adequate supply for essential civilian uses as for agricultural purposes, meat processing and preservation, industrial nitric acid, potassium nitrate and industrial explosives for governmental projects, mining (metallic and non-metallic), quarrying, petroleum exploration and development, production of forest products, railroad and highway construction, and agriculture, and they may be made at the discretion of the Director of Priorities without regard to any preference ratings assigned to particular contracts or orders. If the Director of Priorities shall not have issued, by the first day of the month, specific directions covering deliveries of sodium nitrate which may be made during such month, producers and distributors may, subject to the provisions of Priorities Regulation No. 1, make deliveries of sodium nitrate without limitation.

(e) Reports. Reports shall be made by producers and distributors at such times on such forms and with respect to such materials as shall be prescribed by the Chemicals Branch of the Office of Production Management. In addition persons who order or receive sodium nitrate from a producer or distributor shall furnish to the said Chemicals Branch information with respect to requirements and use of such material at such times and on such forms as the said Chemical Branch shall prescribe. All persons shall furnish such other and further information as the said Chemicals Branch may deem necessary for the orderly and effective operation of this Order.

(f) Notification of customers. Producers shall, as soon as practicable, notify each of their regular customers of the requirements of this Order, but the failure to give such notice

shall not excuse any person from the obligation of complying with the terms of this Order.

(g) Violations or false statements. Any person who violates this Order, or who wilfully falsifies any records which he is required to keep by the terms of this Order, or by the Director of Priorities, or otherwise wilfully furnishes false information to the Director of Priorities or to the Office of Production Management may be deprived of priorities assistance or may be prohibited by the Director of Priorities from obtaining further deliveries and materials subject to allocation. The Director of Priorities may also take any other action deemed appropriate, including the making of a recommendation for prosecution under section 35 (a) of the Criminal Code (18 U. S. C. 80).

(h) Appeals. Any person affected by this Order who considers that compliance therewith would work an exceptional and unreasonable hardship upon him, or that it would result in a degree of unemployment which would be unreasonably disproportionate compared with the amount of sodium nitrate conserved, or that compliance with this Order would disrupt or impair a program of conversion from nondefense to defense work, may appeal to the Office of Production Management. Reference: N-62, attention Chemicals Branch, setting forth the pertinent facts and the reason he considers he is entitled to relief. The Director of Priorities may thereupon take such action as he deems appropriate.

(j) Effective date. This Order shall take effect immediately and shall continue in effect until revoked by the Director of Priorities.

Issued this 15th day of January, 1942.

Letter from the Nitrogen Unit

January 16, 1942.

To Members of the Fertilizer Industry

Gentlemen:

Allocation Order M-62 has been issued, controlling the sale and resale of Nitrate of Soda.

Because of the War, importations of this material may be curtailed to some extent resulting in a shortage of supply during the Spring fertilizer season 1942. Therefore, it is extremely important that the most efficient use be made of the supplies available.

The Department of Agriculture is setting up production goals for various crops on the basis of the greatest needs during the emergency. Therefore, in considering crop requirements and making geographical distribution of Nitrate of Soda under this Order, we will be guided entirely by the advice of the Department of Agriculture, who will work in conjunction with the State Agricultural Departments and State War Boards. It is our objective that all Nitrate of Soda distributed during any month be used as quickly as possible on the farm in that month, and that no hoarding or accumulation of inventories either on the farm or in the factory should occur. Only in this way can the most efficient use be made of the supplies available for agriculture so that each crop designated by the Department of Agriculture receives its quota when it needs it.

Subject to the limitations of the geographical distribution suggested by the Department of Agriculture, every fertilizer manufacturer will receive as nearly as possible similar treatment in the distribution of Nitrate of Soda during the season. The complete and hearty cooperation of each and every fertilizer manufacturer is anticipated so that the Nitrate of Soda available is distributed to the best advantage for immediate use in his community.

Although the Order empowers us to control the distribution by each fertilizer manufacturer and dealer, it is not our intention to do so at present, and we sincerely hope that no occasion will arise that will make such action necessary.

It is important that you impress upon all your agents and dealers their function in the distribution scheme for Nitrate of Soda so that they may, in turn, use their best judgment in the distribution of the Nitrate of Soda available to them and thus assist in accomplishing the purposes of the program to the Department of Agriculture.

Counting on your earnest cooperation, I am

Sincerely,

Herbert H. Meyers,
Chief, Nitrogen Unit.

WAR IMPROVES AGRICULTURAL PROSPECTS

The favorable outlook for agriculture is not materially altered by the spread of war to the Western Hemisphere, according to the Department of Agriculture. Probable results include a stimulation of speculative and storage demand for products unaffected by price ceilings, an expansion of food-for-defense buying, and a continued increase in consumer incomes. It is estimated that 1942 needs of the British for U. S. farm products may be about double the 1941 shipments. The spread of hostilities may increase these needs.

What Do Sales Managers Expect of Their Salesmen?*

By HARRY SIMMONS

THE boss prizes these qualities in salesmen: Loyalty to the house, honesty, resourcefulness, good sportsmanship, and ability to build business on the basis of high quality and service.

At a recent sales meeting, two hundred salesmen were given the opportunity to write down frankly, and anonymously, what they expected of their sales managers.†

In reply, a spokesman for the sales managers laid down, with similar frankness, a list of the responsibilities that sales managers felt they had a right to expect of their salesmen.

Here is the list—with 26 items; and what salesman can properly deny that these are the vital elements that go to build efficient salesmanship!

1. *"Acquire a complete knowledge of your line and your business."*

No man can sell effectively or profitably without such knowledge; and no man can build up his business without developing the necessary confidence that this knowledge inspires. Half knowledge—or partial knowledge—is worse than none at all. Only complete knowledge can do a complete job. And only a complete job is truly profitable.

2. *"Develop loyalty both to your sales manager and to your customers."*

Loyalty to your sales manager comes first; it is the reciprocation of a similar loyalty on his part. Your loyalty to your customers is a day-to-day loyalty, and springs from your close attention to and concern over their needs and requirements. Both loyalties are indispensable to the modern salesman.

3. *"Practice initiative and thus become a self-starter."*

This is nothing more nor less than the ability to do things without being told. But it is an unusual ability, and one that multiplies the value of the salesman in the degree to which it is practiced. If you can initiate plans and methods and action, and can handle your job without too much supervision, you are a self-starter—an outstanding type of salesman. If your sales manager must constantly do everything for you, you are "just one of the boys."

4. *"Generate an all-consuming enthusiasm for your product and your line."*

Without enthusiasm you can do nothing. With it, you may move mountains. It is infectious. The customer catches the spark of your enthusiasm as you generate it, and he usually reacts to by believing your story—which makes your road to the sale a smooth, paved highway.

5. *"Work hard and work regularly."*

There is no substitute for hard work, whether physical or mental. No salesman ever made a success, or advanced his position, by taking things easily. And no alibi for laziness has yet been discovered that will bring in the business and impress your sales manager. Successful salesmen get that way from the effort and thought they put into their jobs.

6. *"See that prospect and customer contacts are followed up."*

One call doesn't make a sale, any more than one swallow makes a Summer. Your follow-up is just as important as your original contact; even more so, because it is the persistence of your follow-up calls that wears down the resistance of your prospect. Contacts may be followed up either by personal calls, or by mail, or by telephone. It is pitiful to see how many salesmen make one casual call on a prospect and let it go at that—expecting some miracle to bring the customer into camp.

7. *"Follow through on your original line of action."*

Finish what you start, whether it is a solicitation, a presentation, or a campaign. Thoroughness is a virtue that pays dividends in additional sales. Don't be afraid to tell your complete story or follow through with your original plan. You never know when your prospect is going to remember one outstanding statement you made—and give you an order.

8. *"Don't forget that honesty is still the best policy."*

Honesty is the most vital element in modern salesmanship. It is still the rock-bottom basis of good service, good relations, good business. Honesty to your firm, to your customer, and to yourself can never become old-fashioned.

* Reprinted from Sales Management.

† See "What Has a Salesman the Right to Expect from His Sales Manager?" in the January 3, 1942, issue of The American Fertilizer.

No matter what the smartest wisecracker may say or do, successful selling is still based on the principle of the Golden Rule.

9. *"Follow the instructions and suggestions you receive from your home office."*

They are sent you in the spirit of helpfulness, and are the results of longer experience, a broader view-point, and a clearer perspective than you can possibly have in the field. Most important of all, they are based on a house policy that must be followed by all in order that success may follow for all. It is the old story of hanging together, so that you may not hang separately!

10. *"Remember that good sportsmanship is a prime asset of good salesmanship."*

Sportsmanship is just as vital in the business field as on the playing field. The order you can lose goodnaturedly today may bring you a larger order tomorrow. But regardless of orders today or tomorrow, no one has much use for a poor sport when he can just as easily do business with a good one. We cannot always win, especially in the business of selling, but surely we can always "take it."

11. *"Bear in mind that friendliness is the cleverest strategy of all."*

Friendliness leads to friendship; and friendship is the No. 1 express highway to more sales. Many a salesman wears out his brain trying to figure out some magic formula for success; when all he needs to do most of the time is to develope his attitude of friendliness and act like a human being. Let's not forget that prospects and customers are all human.

12. *"Act with self-confidence to develop customer-confidence."*

The qualities of confidence and sincerity work hand in hand, and they work on a prospect in the exact degree to which we use them. We cannot present our sales story in any manner of shilly-shally timidity and expect to get to first base. We can inspire confidence in our listener only by the voltage of our own confidence and sincerity.

13. *"Always treat principals and subordinates with courtesy and consideration."*

To the executive behind the desk, or the clerk behind the counter, the salesman is the company. They must both be treated equally well; for you never know when positions may be reversed and the clerk of today become the executive of tomorrow. Not only for today does the salesman work, but also with an eye to the future.

14. *"Dress in good taste to create favorable impressions."*

No one enjoys doing business with a seedy, unkempt-looking individual. At the same time, it is not necessary to shine with sartorial splendor. A happy medium in dress unconsciously favors the salesman of good taste with a reputation for good judgment and creates that most important of all firsts—a favorable first impression.

15. *"Lay out your calling schedules with an eye to efficiency and despatch."*

The salesman in the territory is the master of his own fate; and his reputation is at stake as he uses or mis-uses his valuable selling time. Lay out your routes and your calls to conserve time and opportunity; for no product is so expensive or so easily dissipated as these two elements. You will never have enough of either, unless your own efficiency builds them up for you.

16. *"Don't forget that paper work is a necessary element of sales work."*

Reports must be made; letters must be written; orders must be filled out—all in proper order and with accuracy, so that home office records and plans and routine may proceed uninterruptedly with full knowledge of what is going on in the field. You are asked to make a few reports as possible—but those few must be made without fail. Many of the vital activities of your sales manager's office—activities that affect you personally—are dependent on your cooperation. When you fail to cooperate, the machinery of helpfulness at the home office fails to function for you.

17. *"Take good care of your samples if you want your samples to help your business."*

A sample is only as good as it looks; and if it looks dirty, messy, badly worn out or badly cared for, it will naturally make a poor impression on your prospects. When you stop to think that your sales are quite definitely tied up with the condition of your samples, you will realize the importance of keeping that condition A-1.

18. *"Build your present customers into better customers."*

Naturally, the customers you now have on your list are your prime consideration; hold them closely to you with steel bands of service and attention. One good customer on the books is worth half a dozen prospects in the field. Play him up and build him up for all he is worth.

19. *"You must bring in new accounts to replace those that are lost."*

One of the important duties of every good salesman is to bring new blood into the organization. To the extent that he is successful in

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Burlap Shortage Discussed

On January 2nd and 5th a series of discussions among government officials representing OPA, OPM and OADR was held at Washington, D. C.

OPM burlap officials asserted they were aware of the seasonal variations of the fertilizer industry and would be inclined to be reasonable regarding the 30-days-1/24-of-preceding-2-years-supplies regulation.

Queries by OPA officials as to whether fertilizer industry could rely on getting its allotted share of present inventories caused OADR officials to question whether fertilizer burlap needs were as dire and vital as needs of other agricultural products, feeds, for example, and whether it would not be a good idea to cut fertilizer's allotment in favor of other agricultural products. OPA officials emphasized fertilizers' dependence on burlap and secured promise that fertilizers' allotment would not be tampered with.

It was freely conceded that War Department would get all it wants of present stocks of unbroken bales, particularly heavier grades, for sandbags, camouflage, etc. Agriculture and chemical products will get what is left of present inventories and ⅓ of future imports, if any. None will be used in the future for any other civilian uses.

Containers section officials of OPM thought paper bags could be secured in quantities sufficient to replace fertilizer burlap shortage by March 1st. It was agreed fertilizer could not be reliably shipped in bag sizes larger than for 100 pounds and 4-ply strength, or 3-ply heavies.

Chances are fertilizer industry will have to shift more to paper bags for duration of burlap shortage, with analyses printed on tags where such procedure allowed, or on printed labels pasted on the bags in states requiring analyses to show on containers, with only the company identification and general trademarks to be printed on bags by paper bag manufacturers.

Fertilizer companies closing burlap bags with machine sewing at present can change over to machine-sewed closing on paper by purchasing different "foot" for sewing machine; those closing burlap bags with hand sewing will have to use wire ties for paper. OPM officials will see if sufficient wire can be secured for this.

Farmers will have to be sold even greater re-use of bags. Fertilizer companies can assist in this by offering good inducement for return of bags and by quotations on "bring-your-own-container" basis.

Fertilizer industry and fertilizer consumers can be "educated" by NFA and USDA as to necessity of conserving present supplies of burlap and replacing shortage with paper.

OADR officials will report to OPM officials agricultural bag requirements for all products. OPM officials will report to fertilizer industry committee meeting Tuesday, January 13, definite information on availability of paper bags for industry's use this spring season.

Argentina to Develop Cotton Bags as Substitute for Jute

Because of growing difficulties in finding export markets for surplus cotton, the existing shortage of jute bags, and the needs of industries requiring bags in their operations, the Government of Argentina has authorized the allocation of 10,000,000 pesos ($3,000,000) for the construction of a National Cotton Sack Factory to make bags from surplus cotton, according to a release from the U. S. Department of Agriculture.

The factory will have an estimated production capacity of 30,000,000 sacks a year, or sufficient to supply the twenty to twenty-three million bags used annually by the flour and meal industries, leaving some seven or eight million bags for other uses. It is believed, however, that it will be difficult to have the plant in operation before the middle of 1943 because of delays in securing machinery from the United States.

The construction, installation, equipment and initial management of the factory will be under the supervision of the Argentine Cotton Board, which for several years has been advocating the use of low-grade cotton from the Chaco region for that purpose. It is estimated that about 50,000 bales of low-grade cotton will be consumed annually in the factory's estimated output of 30,000,000 bags. This quantity, it is said, represents practically the entire production of low-grade cotton in the Chaco region at the present time.

The authorization for the factory points out that encouragement of the internal consumption of Argentine cotton will contribute to reduction of the exportable surplus and thus to the solution of the current international cotton surplus problem. In addition, the factory is expected to aid colonization of the Chaco and Formosa territories in northern Argentina.

The decree also points out that should cotton bags be substituted for the entire stock of jute bags now used annually in Argentina for the handling of flour and other mill products, sugar, tannin, yerba, raw cotton, cotton seed, tobacco, and other agricultural products, a total of about 207,000 bales of cotton would be required. This is equivalent to the amount of raw cotton now required in Argentina annually in the manufacture of other cotton products.

No estimate of the Argentine cotton crop for 1941-42 is available as yet. Last season's crop, however, amounted to the low figure of 232,000 bales. The average crop for the 5-year period ending with the 1939-40 crop was 289,000 bales annually.

BUSINESS IMPROVES

Business activity at the beginning of the new year is at record levels. The rate of industrial production during 1941 has been raised more than 20 per cent.

Obituary

JOSEPH J. SUMMERELL

Joseph John (Jay) Summerell, for many years District Manager for Chilean Nitrate Sales Corporation, passed away at his home in Raleigh, N. C., on January 9th at the age of 53. He had been confined to his bed for nearly three years following an automobile accident.

Mr. Summerell was one of the best known men in the fertilizer industry, in which he spent the greater part of his business life. He began his work with the Caraleigh Phosphate & Fertilizer Works of Raleigh, N. C., and was later connected with the Farmers Cotton Oil Co., Wilson, N. C., Wessel, Duval & Co., and since 1927 with the Chilean Nitrate organization. For many years he was a regular attendant at the conventions of the National Fertilizer Association. He was liked by all who knew him for his friendly spirit, and his courageous fight for health following his injury won much admiration. He was a member of the Raleigh Kiwanis Club and a leader in civic activities.

Mr. Summerell was the son of Dr. J. N. H. and Anna Summerell of New Bern, N. C. He is survived by his wife, formerly Miss Lee Moye Brown of Greenville, N. C., and three children, Mrs. Thurman Kitchin, Jr., of Wake Forest, N. C., Howard Summerell of the U. S. Naval Air Service and J. J. Summerell, Jr., of the United States Navy.

Tag Sales for 1941 Increase

Fertilizer sales in 1941 in 17 States, as indicated by the sale of tax tags, amounted to 5,925,000 tons, an increase of 8 per cent over 1940. The same percentage increase was recorded in the southern and mid-western regions. Aggregate tax sales in the 17 States were a little below the record set in 1930, but with the exception of that year were the largest ever recorded.

Sales in the 17 States have accounted for a smaller proportion of total fertilizer sales in the United States in recent years than was the case in the pre-depression period. This means, of course, that fertilizer consumption in other parts of the country has been increasing more rapidly than in the tag sale States.

If we assume that the ratio of tax sales to total fertilizer sales in 1941 was the same as the average for the preceding five years, we arrive at a total sales figure of 8,400,000 tons. This does not include distribution of fertilizer by Government agencies. Commercial sales were 7,839,000 tons last year, 8,196,000 tons in 1937 and 8,222,000 tons in 1930.

It seems probable that industry sales last year were larger than in any preceding year. Distribution of fertilizer by Government agencies also reached a new peak in 1941, so total fertilizer consumption was at an all-time high.

In only three States—Tennessee, Kentucky, and Missouri—were 1941 tag sales below 1940. The greatest increase took place in the west south central States, a region which has been

(Continued on page 26)

FERTILIZER TAX TAG SALES

State	December 1941 Per Cent of 1940	December 1941 Tons	December 1940 Tons	December 1939 Tons	January-December 1941 Per Cent of 1940	January-December 1941 Tons	January-December 1940 Tons	January-December 1939 Tons
Virginia	65	6,138	9,466	8,312	102	399,377	393,069	418,089
N. Carolina	141	71,303	50,616	47,101	107	1,150,343	1,076,730	1,215,887
S. Carolina	191	31,125	16,285	15,340	106	729,447	685,310	678,859
Georgia	144	27,960	19,358	11,153	106	806,326	762,725	689,790
Florida	139	84,428	60,756	78,677	115	654,664	568,671	556,782
Alabama	210	8,100	3,850	8,450	101	581,500	575,900	562,100
Mississippi	104	13,200	12,750	8,365	115	368,667	319,508	318,761
Tennessee	12	110	950	0	96	141,461	147,311	130,354
Arkansas	490	10,050	2,050	900	123	124,475	101,000	74,122
Louisiana	162	7,200	4,450	4,800	116	182,010	156,775	160,488
Texas	501	7,090	1,415	4,244	121	142,666	118,199	95,226
Oklahoma	286	2,000	700	600	176	12,950	7,363	7,622
Total South	147	268,704	182,646	187,942	108	5,293,886	4,912,561	4,908,080
Indiana	...	4,051	213	625	112	340,161	302,750	263,145
Illinois	117	437	375	750	122	63,004	51,748	43,456
Kentucky	0	0	0	0	99	121,976	123,102	120,009
Missouri	...	115	5	177	99	86,964	87,577	67,733
Kansas	48	175	365	70	107	19,186	17,931	14,366
Total Midwest	499	4,778	958	1,622	108	631,291	583,108	508,709
Grand Total	149	273,482	183,604	189,564	108	5,925,177	5,495,669	5,416,789

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FERTILIZER MATERIALS MARKET

NEW YORK

Deliveries of Materials Behind Schedule and No New Business Accepted. Some Nitrate of Soda Released.

Exclusive Correspondence to "The American Fertilizer."

NEW YORK, January 13, 1942.

The demand for all chemical fertilizer materials continues but practically no new business is being booked either for sulphate of ammonia or potash salts.

On these materials, deliveries are being made regularly against specific contracts, but in practically all cases manufacturers are behind on their deliveries.

All fertilizer manufacturers are pressing for delivery of their raw materials but, from all indications, the deliveries will continue to lag.

Nitrate of Soda

In certain sections of the country some small deliveries of nitrate of soda are being made to fertilizer manufacturers, but no material whatsoever has been released as yet in the northern sections. Due to lack of steamers, it appears likely that the situation in nitrate of soda will be difficult for some time to come.

Superphosphate

Superphosphate is firm and there will probably be no lessening in the demand for this material.

Organics

Organics continue to move fairly well and some lots of nitrogenous were sold recently at considerably higher prices.

BALTIMORE

Little Change in Market. Practically No Resale Material Available. Bag Situation Still Unsettled.

Exclusive Correspondence tc "The American Fertilizer."

BALTIMORE, January 13, 1942.

The first two weeks of the New Year have not brought any material changes in the market on fertilizer materials, although in some quarters there is some concern shown relative to supplies of nitrate of soda.

Ammoniates.—The demand for feeding materials continues strong on the basis of previously quoted nominal price of $5.70 per unit of nitrogen and 10 cents per unit of B.P.L., f.o.b. basis Baltimore. The market on ground dried blood is on the same level, and these prices about eliminate these ingredients as fertilizer materials.

Nitrogenous Material.—In sympathy with the higher market on feeding materials, the nominal price on domestic nitrogenous is now about $4.00 per unit of nitrogen, f.o.b. Baltimore, but with buying interest at a low ebb.

Sulphate of Ammonia.—There is no re-sale tonnage offering on the market as all fertilizer manufacturers are conserving their supplies pending definite decision regarding the Government supervision on nitrate of soda.

Nitrate of Soda.—There is no change in the situation on this commodity which is still under Government supervision. Some manufacturers, who had figured on using this material in their mixtures, are much concerned should supplies of nitrate be withheld. This would undoubtedly cause an acute shortage of mineral ammoniates, and have a tendency to curtail rather than increase crops. The nominal market is unchanged at $30.00 per ton of 2,000 lb., in bulk; $32.40 in 200-lb. bags and $33.00 in 100-lb. bags, ex port warehouses.

Fish Meal.—In sympathy with the higher market on feeding materials, fish meal guaranteed 60 per cent protein, packed in 100-lb. bags, is now being quoted as high as $75.00 per ton, f.o.b. Baltimore.

Superphosphate.—The market remains unchanged since last report, and run-of-pile is being quoted at 60 cents per unit, while flat 16 per cent grade is offered at $10.10 per ton of 2,000 lb., both in bulk, f.o.b. Baltimore. These prices are subject to change without notice, and as no heavy stocks are accumulated, it would not be surprising, as the season advances, to see a shortage develop with subsequent higher prices.

FERTILIZER MATERIALS

■

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- SULPHURIC ACID
- SULPHATE *of* AMMONIA
- BONE MEALS
- POTASH SALTS
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Havana, Cuba
Houston, Texas
Jacksonville, Fla.
Montgomery, Ala.
Nashville, Tenn.
New Orleans, La.
New York, N. Y.
Norfolk, Va.
Presque Isle, Me.
San Juan, P. R.
Sandusky, Ohio
Wilmington, N. C.

Bone Meal.—The demand is practically nil, and nominal quotation on 3 and 50 per cent steamed bone meal ranges from $37.00 to $38.00 per ton, with 4½ and 47 per cent raw bone meal quoted at $37.50 to $38.00 per ton of 2,000 lb., f.o.b. Baltimore.

Potash.—There is no change in the situation. Some of the fertilizer manufacturers have not covered for their entire requirements, due to the fact that potash manufacturers will not commit themselves to any greater tonnage than they will be able to produce.

Bags.—The burlap situation is still very much unsettled, and most of the fertilizer manufacturers are very much concerned over some particular phases of governmental regulations. Representatives of bag manufacturers are now working with government agencies in an effort to smooth out some questionable points, and it is hoped before long it will be possible to continue deliveries to fertilizer manufacturers without any serious delays or consequences. In the meanwhile, manufacturers are not making any quotations on bags, although burlap is again being quoted for January shipment from Calcutta.

ATLANTA

Advancing Tendency Evident in all Material Prices. Nitrate of Soda Being Allocated by OPM.

Exclusive Correspondence to "The American Fertilizer."

ATLANTA, January 13, 1942.

It is now apparent that commodity markets are commencing to come into their own. A firmer tendency is being manifested all the way around and prices in the fertilizer group are commencing to move.

Insofar as sulphate of ammonia is concerned, while there has not been any basic change in the price as originally issued, there is no further material available and in many instances buyers are paying higher prices where tonnage is offered.

Nitrate of soda is being allocated by OPM and it is the general concensus of opinion that a sufficient tonnage will be available for the spring fertilizer needs. All of this, however, remains to be seen.

We quote the market as follows:

South American Blood.—$5.00 ($6.08 per unit N), c.i.f. the ports.

Imported Tankage.—$5.00 ($6.08 per unit N) and 10 cents, c.i.f. the ports.

Domestic Nitrogenous.—$3.00 ($3.64½ per unit N), western producing points.

Menhaden Unground Scrap.—$72.00 per ton, basis f.o.b. Norfolk.

Acidulated Fish.—Nothing offered.

Sulphate of Ammonia.—Current American production apparently already sold or allocated.

Nitrate of Soda.—Being allocated by OPM.

Cottonseed Meal.—Prime 8 per cent, $40.50 per ton, Memphis; southeastern mills, $43.00.

CHARLESTON

Organic Materials Still Scarce and Prices Continue Firm. Practically No Offerings of Superphosphate.

Exclusive Correspondence to "The American Fertilizer."

CHARLESTON, January 13, 1942.

Nitrogenous.—Interest in this continues strong and supplies are becoming scarce. The market is around $3.00 per unit of ammonia ($3.64½ per unit N), f.o.b. the west for January forward. Some sellers are not offering past January.

Blood.—This material is quoted around $4.75 per unit of ammonia ($5.77½ per unit N), f.o.b. ports for imported materials, but imported material is very scarce. Chicago market is

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$5.10 and higher per unit of ammonia ($6.20 per unit N).

Fish Meal.—Prices range around $72.00 per ton, f.o.b. Norfolk.

Cottonseed Meal.—The 8 per cent grade is offered at $43.00, Augusta; Memphis price, $39.50 to $40.00. The 7 per cent is $40.00 at Augusta.

Superphosphate.—Extremely scarce, practically no offerings.

Bone Meal.—Very little is being offered, especially imported material. Price on the 4½ and 50 per cent grade is around $41.00, c.i.f. ports.

CHICAGO

Fertilizer Organics Market Firm with Few Offerings. Feed Materials at Very High Levels.

Exclusive Correspondence to "The American Fertilizer."

CHICAGO, January 12, 1942.

A firm market is prevalent in organics, with most offerings withdrawn. Buyers, however, consider prices too excessive for such lots that are offered. The situation is, therefore, somewhat stalemated, but a change, one way or the other, appears in the offing.

The market for feed material is decidedly strong, with crushed 11 to 12 per cent unground tankage at $5.40 to $5.50 ($6.56½ to $6.68½ per unit N) and 10 cents Chicago, highest since 1929.

Nominal prices are as follows: High grade ground fertilizer tankage, $4.00 to $4.10 ($4.86 to $4.98½ per unit N) and 10 cents; standard grades crushed feeding tankage, $5.40 to $5.50 (($6.56½ to $6.68½ per unit N) and 10 cents; blood, $5.15 to $5.25 ($6.26 to $6.38 per unit N); dry rendered tankage, $1.20 to $1.25 per unit of protein, Chicago basis.

TENNESSEE PHOSPHATE

Increase in Phosphate Rock Prices Causes Flood of Advance Orders. Large Carry-over.

Exclusive Correspondence to "The American Fertilizer."

COLUMBIA, TENN., January 10, 1942.

The rise in prices of ground phosphate rock announced about December 10th to become effective January 1, 1942, caused considerable business to be placed in anticipation of that rise, but the accumulation of business which would have been placed all during October and November, coupled with the increased phosphate consciousness of the entire country by AAA activities, turned loose a flood of orders which made December 1941 shipments over three times as large as December, 1940, and left a carry-over of 1941 orders to be filled in 1942 equal to the entire business done in first six months of 1941.

Of course, all followers of the AAA program who think the matter through, come to realize that even if airplane speed of action supplied by superphosphate might be preferable in the ordinary row crop stimulation through a small amount applied at planting time, the phosphorus supplied in large quantities for permanent soil improvement ostensibly being furthered by AAA will be far better and more cheaply supplied by finely ground phosphate rock, fed to legumes, most of which will be turned under.

There are 120,000,000 acres in the Mississippi Valley that would profitably respond to such a program. If every tenth farm in that area applied 1,000 lb. of rock phosphate every ten years, it would require five million tons of ground rock per year. If the fertilizer industry would promote the use of ground phosphate rock by using their influence on Departments of Agriculture in its favor, over fifty times as much ground rock would be used and more than three times as much commercial fertilizer as is now employed.

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Superphosphate Production Still Increasing

Superphosphate production continues to run well above the corresponding month of the preceding year, according to reports of acidulators to The National Fertilizer Association. Aggregate production at such plants in November exceeded output in November, 1940, by 8 per cent. There was a somewhat greater increase in the southern area than in the northern. Total production was slightly larger than it had been in October and was the largest for any month since January, 1940.

Aggregate production in the first 11 months of the year was at a new high peak for the period for recent years. The increase over the January-November, 1940, period amounted to 10 per cent, the net result of increases of 6 per cent in the North and 13 per cent in the South.

All classes of shipments were larger in 1941 than in 1940, with the most pronounced increase taking place in shipments of superphosphate directly to consumers.

Stocks at Comparatively Low Level

Stocks of bulk superphosphate at the end of November were comparatively low for the period, particularly so in view of the prospective heavy demands in the season ahead. Not since 1934 had stocks of bulk at the end of November been as low as they were in 1941. The increase during the month was negligible, being the smallest November rise on record. Normally stocks increase each month from May to January.

In contrast to the small increase in stocks of bulk, stocks of superphosphate in base and mixed goods rose sharply in November, and at the close of the month were the highest for the period in more than a decade.

Superphosphate Production, Shipments, and Stocks for November and January-November, 1941 and 1940

Expressed throughout in equivalent tons of 16% A.P.A. Based on reports by acidulators to The National Fertilizer Assn.*

November	1941	1940
Stocks—First of month:		
Bulk superphosphate	903,184	1,009,720
Base & mixed goods	462,508	352,409
Production:		
Bulk superphosphate	368,099	338,189
Base & mixed goods	6,550	7,163
Total Production	374,649	345,352
Other Receipts†	45,094	40,477
Book Adjustments	+991	+968
Total Supply	1,786,426	1,748,926
Shipments:		
Superphosphate:		
To mixers	123,710	85,198
To other acidulators	62,105	41,131
To consumers, etc.	66,997	27,263
Total Superphosphate	252,812	153,592
Base & mixed goods	46,941	23,336
Total Shipments	299,753	176,928
Stocks—End of month:		
Bulk superphosphate	905,715	1,053,978
Base & mixed goods	580,958	518,020
Total Stocks	1,486,673	1,571,998

Accumulated Production and Shipments for January-November

	1941	1940
Production:		
Bulk superphosphate	3,634,939	3,309,198
Base & mixed goods	118,487	115,317
Total Production	3,753,426	3,424,515
Shipments:		
Superphosphate:		
To mixers	1,379,486	1,285,885
To other acidulators	640,230	470,034
To consumers, etc.	1,112,312	824,702
Total Superphosphate	3,132,028	2,580,621
Base & mixed goods	1,405,160	1,321,327
Total Shipments	4,537,188	3,901,948

* Represents approximately 85 per cent of total production.
† Includes inter-company transfers.
Base includes wet and/or dry base.

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Baltimore, Md.	East Point, Ga.	Pierce, Fla.
Buffalo, N. Y.	East St. Louis, Ill.	Port Hope, Ont., Can.
Carteret, N. J.	Greensboro, N. C.	Presque Isle, Me.
Cayce, S. C.	Havana, Cuba	Savannah, Ga.
Chambly Canton, Quebec, Can.	Henderson, N. C.	Searsport, Maine
	Montgomery, Ala.	South Amboy, N. J.
Charleston, S. C.	Norfolk, Va.	Spartanburg, S. C.
Cincinnati, Ohio	No. Weymouth, Mass.	West Haven, Conn.
Cleveland, Ohio		Wilmington, N. C.

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Carteret, N. J.	East St. Louis, Ill.	Montreal, Quebec, Can.	St. Paul, Minnesota
Charleston, S. C.	Greensboro, N. C.	New York, N. Y.	Savannah, Ga.
Cincinnati, Ohio	Havana, Cuba	Norfolk, Va.	Spartanburg, S. C.
Cleveland, Ohio	Henderson, N. C.	No. Weymouth, Mass.	Wilmington, N. C.

Nitrogen for Vegetables*

Uncle Sam's Food-For-Defense program calls for unprecedented emphasis on protective foods—among which are vegetables. The 1942 goals include: 1,935,000 acres of truck crops for fresh shipment (5 per cent increase over 1941), 1,500,000 acres for processing (slight increase) and 5,760,000 farm gardens (30 per cent increase).

Roughly, this expanded vegetable acreage—including farm gardens but not those in small towns—will run 27 per cent of the cotton acreage, nearly five times as much as tobacco, twice as much as potatoes, and over seven times as much as sweet potatoes. It is a market worthy of attention.

Lettuce

In North Carolina Extension Circular No. 248 (Feb., 1941) "Lettuce Growing in North Carolina," R. Schmidt recommends about 2,000 lb. per acre of a mixed fertilizer containing 5 per cent N, 7 to 9 per cent P_2O_5 and 5 per cent K_2O.

He says: "When the fertilizer is applied early in January, 50 per cent of the N should be derived from organic sources and 50 per cent from inorganic sources. For later applications, the ratio should be 40 per cent organic and 60 per cent inorganic."

What about the alkaline-calcareous soils of the Southwest? Comprehensive investigations made by McGeorge and co-workers on fertilization of lettuce are reported in Arizona Agricultural Experiment Station Technical Bulletin No. 85, dated May, 1940.

In their Conclusions, Part No. 1, on page 436, they report: "Excellent response to fertilization was obtained in all cases by use of nitrogenous and phosphatic materials. Phosphates definitely increase maturity and nitrogen delays it. Best results were obtained with nitrogenous and phosphatic mixtures in which a part of the nitrogen is in organic form."

On page 450, they point out the mobility of N in the nitrate form and the seriousness of leaching under irrigation. They say: "For these reasons, organic forms of N in which nitrification and availability extend over a longer period than other forms have proved most effective for application at planting time . . . ."

Farm Gardens

It takes about one-half acre to grow enough vegetables for a family of five—according to the calculation of H. R. Niswonger in North Carolina Extension Circular No. 122. That would mean nearly 3,000,000 acres in farm gardens, on the basis of 1942 goals—a total much larger than is usually assumed. This does not include the endless number of small town gardens. When the high mineral requirements of most vegetables are considered, it is clear that the potential fertilizer tonnage for optimum production is suprisingly large. These plant nutrients must in most cases be furnished in the form of commercial fertilizers.

Mr. Niswonger reports: "For general garden purpose, the formula should contain nitrogen, phosphoric acid and potash in a fairly well-balanced mixture. The materials in the mixture, however, are of greater importance than the formula ration. About 50 per cent of the ammonia should come from high-grade organic and 50 per cent from inorganic sources."

Peppers

For several years fertilizer tests with peppers were carried out at the Louisiana Fruit & Truck Experiment Station, as published in the Biennial Report, 1939-1940.

The most economical yield was produced from a 4-12-4 mixture. The use of lime proved to be of great importance in production, the increase in yield amounting to 11.1 per cent over the unlimed area.

Four sources of phosphorus were compared but very little difference in yields was observed.

Sources of N did make a difference. In a comparison between an inorganic and a natural organic source of N, highest and most economical yields were obtained from the high-grade natural organic material. On unlimed ground, the natural organic produced about 35 more bu. of U. S. No. 1 peppers per acre; on the limed area, about 66 bu. more per acre. The slight increase in cost of the fertilizer due to the organic source of N was, of course, negligible in comparison to the increase in yield and the greater returns.

* From "Organic News Letter" published by the Organic Nitrogen Institute, Atlanta, Ga.

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Dependable for Fifty Years

All-Steel Self-Contained Fertilizer Mixing Units
Batch Mixers—Dry Batching
Pan Mixers—Wet Mixing
Swing Hammer and Cage Type Tailings Pulverizers
Vibrating Screens
Dust Weigh Hoppers
Acid Weigh Scales

STEDMAN'S FOUNDRY & MACHINE WORKS
AURORA, INDIANA, U. S. A. Founded 1834

WILLIAM L. WELLMANN
BROKER
Baltimore, Maryland

Specializing in

Sulphate of Ammonia
Low Grade Ammoniates
Superphosphate
Sulphuric Acid
Bags

Inquiries and offerings invited

KEYSER BUILDING

DEPENDABLE!

- Large stocks of seasoned materials, available for prompt shipment keyed to your needs.
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46 to 48% Available Phosphoric Acid

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Tampa, Florida

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Washington, D. C.
716 Investment Bldg.

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Sales Agents:
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BORAX

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. . . . WHEN BORON IS NEEDED TO CORRECT A DEFICIENCY OF THIS IMPORTANT SECONDARY ELEMENT

Agricultural authorities have shown that a lack of Boron in the soil can result in deficiency diseases which seriously impair the yield and quality of crops.

When Boron deficiencies are found, follow the recommendations of local County Agents or State Experiment Stations.

Information and references available on request.

AMERICAN POTASH & CHEMICAL CORPORATION
70 PINE STREET, NEW YORK CITY
Pioneer Producers of Muriate of Potash in America
See Page 4

NOVEMBER SULPHATE OF AMMONIA PRODUCTION STEADY

The figures of the U. S. Bureau of Mines show that the production of by-product sulphate of ammonia and ammonia liquor continued at previous high levels during last November. There was a small decrease of about 3 per cent in sulphate production and of 4 per cent in ammonia liquor. Stocks on hand at the end of the month showed a decrease of 2.5 per cent and continue to amount to about a two-weeks' production.

	Sulphate of Ammonia Tons	Ammonia Liquor Tons NH_3
Production:		
November, 1941	61,359	2,537
October, 1941	63,376	2,653
November, 1940	62,934	2,509
January-November, 1941	679,765	28,866
January-November, 1940	653,756	25,801
Shipments:		
November, 1941	62,190	2,732
October, 1941	69,026	3,024
November, 1940	55,476	2,690
Stocks on hand:		
November 30, 1941	33,212	1,124
October 31, 1941	34,057	1,054
November 30, 1940	51,397	1,837
October 31, 1940	44,189	1,836

CLASSIFIED ADVERTISEMENTS

SITUATION WANTED

FERTILIZER Chemist with five years' experience desires research or analytical position. Age 26, draft-deferred, employed. Address "515," care THE AMERICAN FERTILIZER, Philadelphia.

HELP WANTED

WANTED man with five to ten years' experience in the manufacture of complete fertilizers to act as Assistant Superintendent of plant. Must have High School education or better and must be able to furnish best of references. Excellent opportunity for promotion. In applying please state age and salary expected. Address "520," care THE AMERICAN FERTILIZER, Philadelphia.

PROGRESS ON AMMONIA PLANT

Construction of the synthetic-ammonia plant at Muscle Shoals is somewhat behind schedule owing to difficulties in obtaining equipment. Although orders for compressors, converters, and other heavy machinery were placed in January or February, 1941, but few deliveries have been made. The initial priority rating received by these orders was A-1-e, but it was necessary to raise this rating through A-1-c to A-1-a before any progress could be made in obtaining the necessary apparatus. This difficulty in obtaining equipment has been due to the fact that orders for the machinery were in direct competition with orders for military necessities such as guns and armor. Despite these delays, however, it is hoped that the plant will be in operation by the spring of 1942.

WHAT DO SALES MANAGERS EXPECT OF THEIR SALESMEN?

(Continued from page 11)

adding new customers to his list, does he keep his sales curve up to the profitable producing level. It is well understood that a customer list of almost any business has an average annual mortality of around 20%. Which means that during each year you must bring in 20% of new accounts merely to keep your customer list static; and even more, if you expect to keep building up to a larger volume each year.

20. *"Keep in touch with new developments in the world at large."*

It is not enough to be able to stand still in business, because that means gradually slipping backward. You must keep moving forward with the new developments in your line and in your industry and in your own little world, so as to be able to talk to your trade intelligently. Business is in a constant state of flux—with times and conditions and opportunities changing continually. It is the modern salesman's job to keep abreast of these changes, so as to keep his trade fully informed of what is going on as it affects his business and theirs.

21. *"Play up constantly the prestige of your firm."*

It would surprise and chagrin many a salesman to discover how definitely his reception

Fertilizer Machinery AND Acidulating Equipment
BATCH MIXERS — PULVERIZERS — CAGE MILLS — SCREENS — SCALES
ELEVATORS, AND ALL OTHER EQUIPMENT FOR COMPLETE PLANTS
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MAILING
LIST CATALOG
FREE

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MILORGANITE

Specializing

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Nitrogenous Materials

Blood and Fertilizer Tankage

Bone Meals

Manganese Sulphate

SOUTH AMERICAN DRY RENDERED TANKAGE

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PEOPLES OFFICE BUILDING
Charleston, S. C.

Ashcraft-Wilkinson Co.

Fertilizer Materials ▲▼ *Cottonseed Products*

DIRECT IMPORTATIONS OF

Nitrogenous Material - Bone Meal
Nitrate of Soda - Potash Salts
Sulphate of Ammonia

South American Blood and Tankage
Foreign Whale and Fish Guano

Exclusive Selling Agents
DUVAL TEXAS SULPHUR COMPANY, HOUSTON, TEXAS

Home Office: **ATLANTA, GA.** CABLE ADDRESS: ASHCRAFT

Offices: NORFOLK, VA., National Bank of Commerce Bldg.; CHARLESTON, S. C., Exchange Bank Bldg.

by the trade is dependent upon the prestige of his firm, rather than upon himself. He may not realize it; but it is the firm name which makes it possible for the salesman and the product to appear before the prospect in the first place. So we will be smart to capitalize on the prestige of our firm to the fullest extent.

22. *"Help your dealers in their re-sale problems."*

It is well to bear in mind that no sale is really final until it moves off the dealer's shelf. Therefore, everything we can do to help the dealer sell, helps us to sell the dealer. It is to our own selfish interest to work with our dealers as effectively as possible, so that we may both sell as much as possible.

23. *"Talk quality and opportunity rather than price and competition."*

This is a nation accustomed to high quality merchandise. Do not permit anything to blind you to the permanent opportunity of selling increasingly better quality. If you will leave the lesser subjects of price and competition to the mercy of the "weak sisters"—and confine your efforts to the more constructive side of selling—you will reap a reward fully commensurate with your courage and your intelligence.

24. *"Keep your eyes open and watch for the 'breaks.'"*

A "heads up" attitude will go a long way towards helping you to win "hands down." Many a salesman cries about the breaks the other fellow gets; but he doesn't stop to think that the other fellow usually gets the breaks because he makes them and meets them more than half way.

25. *"Don't be afraid to ask for the order, and ask for plenty!"*

You can never get into trouble by asking for an order—but trouble will certainly look you up if you don't. Being timid in your demands won't get you anywhere. You may only get half as much as you ask for; but if you ask for only half as much as you should, you will only get half of *that*. Whatever else may occur, don't be afraid for the order—today, tomorrow, and all the time.

26. *"Keep the spirit of service stirring within you."*

Service is still the most important thing you have to sell, from the stand-point of both yourself and your product. No salesman's business is better than his service. And in these modern times the word service covers a multitude of golden opportunities for building good will. Keep up your service, and you will enlarge the horizon of your opportunities and the size of your income.

TAG SALES FOR 1941 INCREASE

(Continued from page 14)

staging a sharp come-back in fertilizer consumption. Combined 1941 sales in Mississippi, Arkansas, Louisiana, and Texas were 28 per cent larger than in 1937, although sales in the South as a whole showed a slight decline between these two years.

The Midwest has experienced a more pronounced upward trend in tax sales in the past several years than has the South. The rate of use is still comparatively low in the Midwest, however, and a continuation of the rising trend will likely be witnessed. The agricultural adjustment program, resulting in a reduction of cotton and tobacco acreage, has tended to retard the expansion of fertilizer use in the South. The most rapid rate of growth in fertilizer consumption over a period of years has taken place in the Far West.

The factors which usually account for changes in fertilizer consumption in the United States are unusually favorable this year for an increase in tonnage. Farm income is rising sharply, with prices received by farmers higher than in many years. Fertilizer prices are relatively low. A marked increase in food production is asked for by the U. S. Department of Agriculture. Under normal conditions such factors would make a new peak in fertilizer consumption in 1942 a foregone conclusion. But these are war times, and such factors as transportation facilities and Government requirements for certain chemicals will help to determine fertilizer tonnage. Economic factors lost some of their importance. Supply, rather than demand, will be the limiting factor this year.

SACKETT EQUIPMENT
for the Fertilizer Plant
BATCH MIXERS • PULVERIZERS
SCREENS • BUCKET ELEVATORS
CONTINUOUS AMMONIATING EQUIPMENT
BASING, MIXING & BAGGING UNITS
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KNOW - - - -
- - TO A CERTAINTY

the number of pounds of raw material for a desired per cent. of plant food in a ton of mixed goods—or find what per cent. of a certain plant food in a ton of fertilizer produced by a specific quantity of raw materials.

No mathematical calculations are necessary. You can find the figures in a few seconds with the aid of

Adams' Improved Pocket Formula Rule

A Great Convenience for the Manufacturer of High Analysis Goods

To make clearer its use, answers to such problems as the following can be quickly obtained:

How much sulphate of ammonia, containing 20 per cent. of nitrogen, would be needed to give 4½ per cent. nitrogen in the finished product?

Seven hundred and fifty pounds of tankage, containing 8 per cent. phosphoric acid are being used in a mixture. What per cent. of phosphoric acid will this supply in the finished goods?

Should the Adams' Formula Rule become soiled from handling, it may be readily cleaned with a damp cloth.

PRICE $1.00
TO BE SENT WITH ORDER.
Special quotations on twelve or more.

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Sole Distributors
1330 Vine Street :: PHILADELPHIA

BUYERS' GUIDE

A CLASSIFIED INDEX TO ALL THE ADVERTISERS IN "THE AMERICAN FERTILIZER"

This list contains representative concerns in the Commercial Fertilizer Industry, Including fertilizer manufacturers, machinery and equipment manufacturers, dealers in and manufacturers of commercial fertilizer materials and supplies, brokers, chemists, etc.
For Alphabetical List of Advertisers, see page 33.

ACID BRICK
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Chemical Construction Corp., New York City.

ACID EGGS
Chemical Construction Corp., New York City.

ACIDULATING UNITS
Chemical Construction Corp., New York City.
Sackett & Sons Co., The A. J., Baltimore, Md.

AMMO-PHOS
American Cyanamid Co., New York City.

AMMONIA—Anhydrous
Barrett Division, Allied Chemical & Dye Corp., New York City
DuPont de Nemours & Co., E. I., Wilmington, Del.
Hydrocarbon Products Co., New York City.

AMMONIA LIQUOR
Barrett Division, Allied Chemical & Dye Corp., New York City
DuPont de Nemours & Co., E. I., Wilmington, Del.
Hydrocarbon Products Co., New York City.

AMMONIA OXIDATION UNITS
Chemical Construction Corp., New York City.

AMMONIATING EQUIPMENT
Sackett & Sons Co., The A. J., Baltimore, Md.

AMMONIUM NITRATE SOLUTIONS
Barrett Division, Allied Chemical & Dye Corp., New York City

AUTOMATIC ELEVATOR TAKEUPS
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.

BABBITT
Sackett & Sons Co., The A. J., Baltimore, Md.

BAGS AND BAGGING—Manufacturers
Bagpak, Inc., New York City.
Bemis Bro. Bag Co., St. Louis, Mo.

BAGS—Cotton
Bemis Bro. Bag Co., St. Louis, Mo.

BAGS—Paper
Bagpak, Inc., New York City.
Bemis Bro. Bag Co., St. Louis, Mo.

BAGS (Waterproof)—Manufacturers
Bemis Bro. Bag Co., St. Louis, Mo.

BAGS—Dealers and Brokers
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Huber & Company, New York City.
Jett, Joseph C., Norfolk, Va.
Taylor, Henry L., Wilmington, N. C.
Wellmann, William E., Baltimore, Md.

BAGGING MACHINES—For Filling Sacks
Atlanta Utility Works, East Point, Ga.
Bagpak, Inc., New York City.
Sackett & Sons Co., The A. J., Baltimore, Md.

BAG PILERS
Link-Belt Company, Philadelphia, Chicago.

BEARINGS
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.

BELT LACING
Sackett & Sons Co., The A. J., Baltimore, Md.

BELTING—Chain
Atlanta Utility Works, East Point, Ga.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

BELTING—Leather, Rubber, Canvas
Sackett & Sons Co., The A. J., Baltimore, Md.

BOILERS—Steam
Atlanta Utility Works, East Point, Ga.

BONE BLACK
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Huber & Company, New York City.

BONE PRODUCTS
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
Jett, Joseph C., Norfolk, Va.
McIver & Son, Alex. M., Charleston, S. C.
Schmaltz, Jos. H., Chicago, Ill.
Wellmann, William E., Baltimore, Md.

BORAX AND BORIC ACID
American Potash and Chem. Corp., New York City.
Pacific Coast Borax Co., New York City.

BROKERS
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Dickerson Co., The, Philadelphia, Pa.
Huber & Company, New York City.
Jett, Joseph C., Norfolk, Va.
Keim, Samuel L., Philadelphia, Pa.
McIver & Son, Alex. M., Charleston, S. C.
Schmaltz, Jos. H., Chicago, Ill.
Taylor, Henry L., Wilmington, N. C.
Wellmann, William E., Baltimore, Md.

BUCKETS—Elevator
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

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Bentley's Code Cable Address "HLTAYLOR"
NORTH CAROLINA BANK BLDG., WILMINGTON, N. C.
Menhaden Fish Products and Fertilizer Materials

A Classified Index to Advertisers in "The American Fertilizer"

BUYERS' GUIDE

For an Alphabetical List of all the Advertisers, see page 33

BUCKETS—For Hoists, Cranes, etc., Clam Shell, Orange Peel, Drag line, Special; Electrically Operated and Multi Power
Hayward Company, The, New York City.
Link-Belt Company, Philadelphia, Chicago.

BURNERS—Sulphur
Chemical Construction Corp., New York City.

BURNERS—Oil
Monarch Mfg. Works, Inc., Philadelphia, Pa.
Sackett & Sons Co., The A. J., Baltimore, Md.

CABLEWAYS
Hayward Company, The, New York City.

CARBONATE OF AMMONIA
American Agricultural Chemical Co., New York City.
DuPont de Nemours & Co., E. I., Wilmington, Del.

CARS—For Moving Materials
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

CARTS—Fertilizer, Standard and Roller Bearing
Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.

CASTINGS—Acid Resisting
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Duriron Co., Inc., The, Dayton, Ohio.

CASTINGS—Iron and Steel
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

CEMENT—Acid-Proof
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Chemical Construction Corp., New York City.

CHAIN DRIVES—Silent
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

CHAINS AND SPROCKETS
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

CHAMBERS—Acid
Chemical Construction Corp., New York City.
Fairlie, Andrew M., Atlanta, Ga.

CHEMICAL APPARATUS
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Duriron Co., Inc., The, Dayton, Ohio.
Monarch Mfg. Works, Inc., Philadelphia, Pa.

CHEMICALS
American Agricultural Chemical Co., New York City.
American Cyanamid Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Barrett Division, Allied Chemical & Dye Corp., New York City
Bradley & Baker, New York City.
DuPont de Nemours & Co., E. I., Wilmington, Del.
Huber & Company, New York City.

CHEMICALS—Continued
International Minerals & Chemical Corporation, Chicago, Ill.
Phosphate Mining Co., The, New York City.
Wellmann, William E., Baltimore, Md.

CHEMICAL PLANT CONSTRUCTION
Atlanta Utility Works, East Point, Ga.
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Chemical Construction Corp., New York City.
Fairlie, Andrew M., Atlanta, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

CHEMISTS AND ASSAYERS
Gascoyne & Co., Baltimore, Md.
Shuey & Company, Inc., Savannah, Ga.
Stillwell & Gladding, New York City.
Wiley & Company, Baltimore, Md.

CLUTCHES
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

CONCENTRATORS—Sulphuric Acid
Chemical Construction Corp., New York City.
Fairlie, Andrew M., Atlanta, Ga.

CONDITIONERS AND FILLERS
American Limestone Co., Knoxville, Tenn.
Dickerson Co., The, Philadelphia, Pa.
Phosphate Mining Co., The, New York City.

CONTACT ACID PLANTS
Chemical Construction Corp., New York City.

COPPER SULPHATE
Tennessee Corporation, Atlanta, Ga.

COTTONSEED PRODUCTS
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
Jett, Joseph C., Norfolk, Va.
Schmaltz, Jos. H., Chicago, Ill.
Taylor, Henry L., Wilmington, N. C.
Wellmann, William E., Baltimore, Md.

CRANES AND DERRICKS
Hayward Company, The, New York City.
Link-Belt Company, Philadelphia, Chicago.
Link-Belt Speeder Corp., Chicago, Ill., and Cedar Rapids, Iowa.
Sackett & Sons Co., The A. J., Baltimore, Md.

CYANAMID
American Agricultural Chemical Co., New York City.
American Cyanamid Co., New York City.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Jett, Joseph C., Norfolk, Va.
Taylor, Henry L., Wilmington, N. C.
Wellmann, William E., Baltimore, Md.

DENS—Superphosphate
Chemical Construction Corp., New York City.
Stedman's Foundry and Mach. Works, Aurora, Ind.

Andrew M. Fairlie
CHEMICAL ENGINEER
22 Marietta Street Building ATLANTA, GA.
CABLE ADDRESS: "SULFACID ATLANTA"

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DISINTEGRATORS
Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

DRYERS—Direct Heat
Sackett & Sons Co., The A. J., Baltimore, Md.

DRIVES—Electric
Link-Belt Company, Philadelphia, Chicago.

DUMP CARS
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

DUST COLLECTING SYSTEMS
Sackett & Sons Co., The A. J., Baltimore, Md.

ELECTRIC MOTORS AND APPLIANCES
Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.

ELEVATORS
Atlanta Utility Works, East Point, Ga.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

ELEVATORS AND CONVEYORS—Portable
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.

ENGINEERS—Chemical and Industrial
Chemical Construction Corp., New York City.
Fairlie, Andrew M., Atlanta, Ga.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

ENGINES—Steam
Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.

EXCAVATORS AND DREDGES—Drag Line and Cableway
Hayward Company, The, New York City.
Link-Belt Company, Philadelphia, Chicago.
Link Belt Speeder Corp., Chicago, Ill., and Cedar Rapids, Iowa.

FERTILIZER MANUFACTURERS
American Agricultural Chemical Co., New York City.
American Cyanamid Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Farmers Fertilizer Co., Columbus, Ohio
International Minerals & Chemical Corporation, Chicago, Ill.
Phosphate Mining Co., The, New York City.
U. S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.

FISH SCRAP AND OIL
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
Jett, Joseph C., Norfolk, Va.
McIver & Son, Alex. M., Charleston, S. C.
Taylor, Henry L., Wilmington, N. C.
Wellmann, William E., Baltimore, Md.

FOUNDERS AND MACHINISTS
Atlanta Utility Works, East Point, Ga.
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

GARBAGE TANKAGE
Wellmann, William E., Baltimore, Md.

GEARS—Machine Moulded and Cut
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

GEARS—Silent
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.

GELATINE AND GLUE
American Agricultural Chemical Co., New York City.

GUANO
Baker & Bro., H. J., New York City.

HOISTS—Electric, Floor and Cage Operated, Portable
Hayward Company, The, New York City.

HOPPERS
Atlanta Utility Works, East Point, Ga.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

IMPORTERS, EXPORTERS
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Wellmann, William E., Baltimore, Md.

IRON SULPHATE
Tennessee Corporation, Atlanta, Ga.

INSECTICIDES
American Agricultural Chemical Co., New York City
McLaughlin Gormley King Co., Minneapolis, Minn.

LACING—Belt
Sackett & Sons Co., The A. J., Baltimore, Md.

LIMESTONE
American Agricultural Chemical Co., New York City.
American Limestone Co., Knoxville, Tenn.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Wellmann, William E., Baltimore, Md.

LOADERS—Car and Wagon, for Fertilizers
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.

MACHINERY—Acid Making
Atlanta Utility Works, East Point, Ga.
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Chemical Construction Corp., New York City.
Duriron Co., Inc., The, Dayton, Ohio.
Fairlie, Andrew M., Atlanta, Ga.
Monarch Mfg. Works, Inc., Philadelphia, Pa.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

MACHINERY—Coal and Ash Handling
Hayward Company, The, New York City.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.

MACHINERY—Elevating and Conveying
Atlanta Utility Works, East Point, Ga.
Hayward Company, The, New York City.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

MACHINERY—Grinding and Pulverizing
Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

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Duriron Co., Inc., The, Dayton, Ohio.

MACHINERY—Tankage and Fish Scrap
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Sackett & Sons Co., The A. J., Baltimore, Md.
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MAGNETS
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Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

MANGANESE SULPHATE
McIver & Son, Alex. M., Charleston, S. C.
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MIXERS
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Sackett & Sons Co., The A. J., Baltimore, Md.
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NITRATE OF SODA
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Barrett Division, Allied Chemical & Dye Corp., New York City
Bradley & Baker, New York City.
Chilean Nitrate Sales Corp., New York City.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Schmaltz, Jos. H., Chicago, Ill.
Wellmann, William E., Baltimore, Md.

NITRATE OVENS AND APPARATUS
Chemical Construction Corp., New York City.

NITROGEN SOLUTIONS
Barrett Division, Allied Chemical & Dye Corp., New York City

NITROGENOUS ORGANIC MATERIAL
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
DuPont de Nemours & Co., Wilmington, Del.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Smith-Rowland Co., Norfolk, Va.
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NOZZLES—Spray
Monarch Mfg. Works, Philadelphia, Pa.

PACKING—For Acid Towers
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
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Chemical Construction Corp., New York City.

PHOSPHATE ROCK
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American Cyanamid Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
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Huber & Company, New York City.
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Southern Phosphate Corp., Baltimore, Md.
Taylor, Henry L., Wilmington, Del.
Wellmann, William E., Baltimore, Md.

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PIPES—Chemical Stoneware
Chemical Construction Corp., New York City.

PIPES—Wooden
Stedman's Foundry and Mach. Works, Aurora, Ind.

PLANT CONSTRUCTION—Fertilizer and Acid
Chemical Construction Corp., New York City.
Fairlie, Andrew M., Atlanta, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.

POTASH SALTS—Dealers and Brokers
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
Jett, Joseph C., Norfolk, Va.
Schmaltz, Jos. H., Chicago, Ill.
Taylor, Henry L., Wilmington, Del.
Wellmann, William E., Baltimore, Md.

POTASH SALTS—Manufacturers
American Potash and Chem. Corp., New York City.
Potash Co. of America, New York City.
Union Potash & Chemical Co., Chicago, Ill.
United States Potash Co., New York City.

PULLEYS AND HANGERS
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Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

PUMPS—Acid-Resisting
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Duriron Co., Inc., The, Dayton, Ohio.
Monarch Mfg. Works, Inc., Philadelphia, Pa.

PYRITES—Brokers
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., New York City.
Jett, Joseph C., Norfolk, Va.
Wellmann, William E., Baltimore, Md.

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Charlotte Chem. Laboratories, Inc., Charlotte, N C.

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Chemical Construction Corp., New York City.

ROUGH AMMONIATES
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Schmaltz, Jos. H., Chicago, Ill.
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SHOVELS—Power
Link-Belt Company, Philadelphia, Chicago.
Link-Belt Speeder Corp., Chicago, Ill., and Cedar Rapids, Iowa.
Sackett & Sons Co., The A. J., Baltimore, Md.

SPRAYS—Acid Chambers
Monarch Mfg. Works, Inc., Philadelphia, Pa.

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STACKS
Sackett & Sons Co., The A. J., Baltimore, Md.

SULPHATE OF AMMONIA
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Barrett Division, Allied Chemical & Dye Corp., New York City
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International Minerals & Chemical Corporation, Chicago, Ill.
Jett, Joseph C., Norfolk, Va.
Taylor, Henry L., Wilmington, N. C.

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Ashcraft-Wilkinson Co., Atlanta, Ga.
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Bradley & Baker, New York City.
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Jett, Joseph C., Norfolk, Va.
Schmaltz, Jos. H., Chicago, Ill.
Taylor, Henry L., Wilmington, N. C.
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Wellmann, William E., Baltimore, Md.

SUPERPHOSPHATE—Concentrated
Armour Fertilizer Works, Atlanta, Ga.
International Minerals & Chemical Corporation, Chicago, Ill.
Phosphate Mining Co., The, New York City.
U. S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.

SYPHONS—For Acid
Monarch Mfg. Works, Inc., Philadelphia, Pa.

TALLOW AND GREASE
American Agricultural Chemical Co., New York City.

TANKAGE
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
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Bradley & Baker, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
Jett, Joseph C., Norfolk, Va.
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Schmaltz, Jos. H., Chicago, Ill.
Smith-Rowland, Norfolk, Va.
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Wellmann, William E., Baltimore, Md.

TANKAGE—Garbage
Huber & Company, New York City.

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Sackett & Sons, Co., The A. J., Baltimore, Md.

TILE—Acid-Proof
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.

TOWERS—Acid and Absorption
Chemical Construction Corp., New York City.
Fairlie, Andrew M., Atlanta, Ga.

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Sackett & Sons Co., The A. J., Baltimore, Md.

UREA
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UREA-AMMONIA LIQUOR
DuPont de Nemours & Co., E. I., Wilmington, Del.

VALVES—Acid-Resisting
Atlanta Utility Works, East Point, Ga.
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Duriron Co., Inc., The, Dayton, Ohio.
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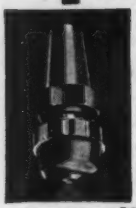

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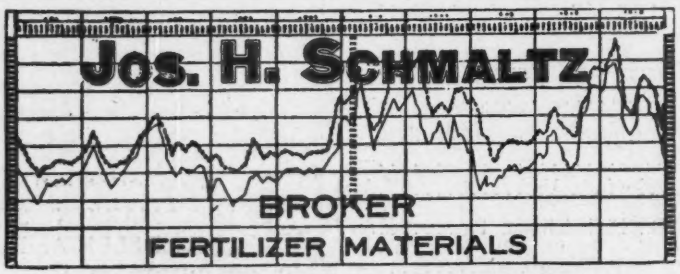

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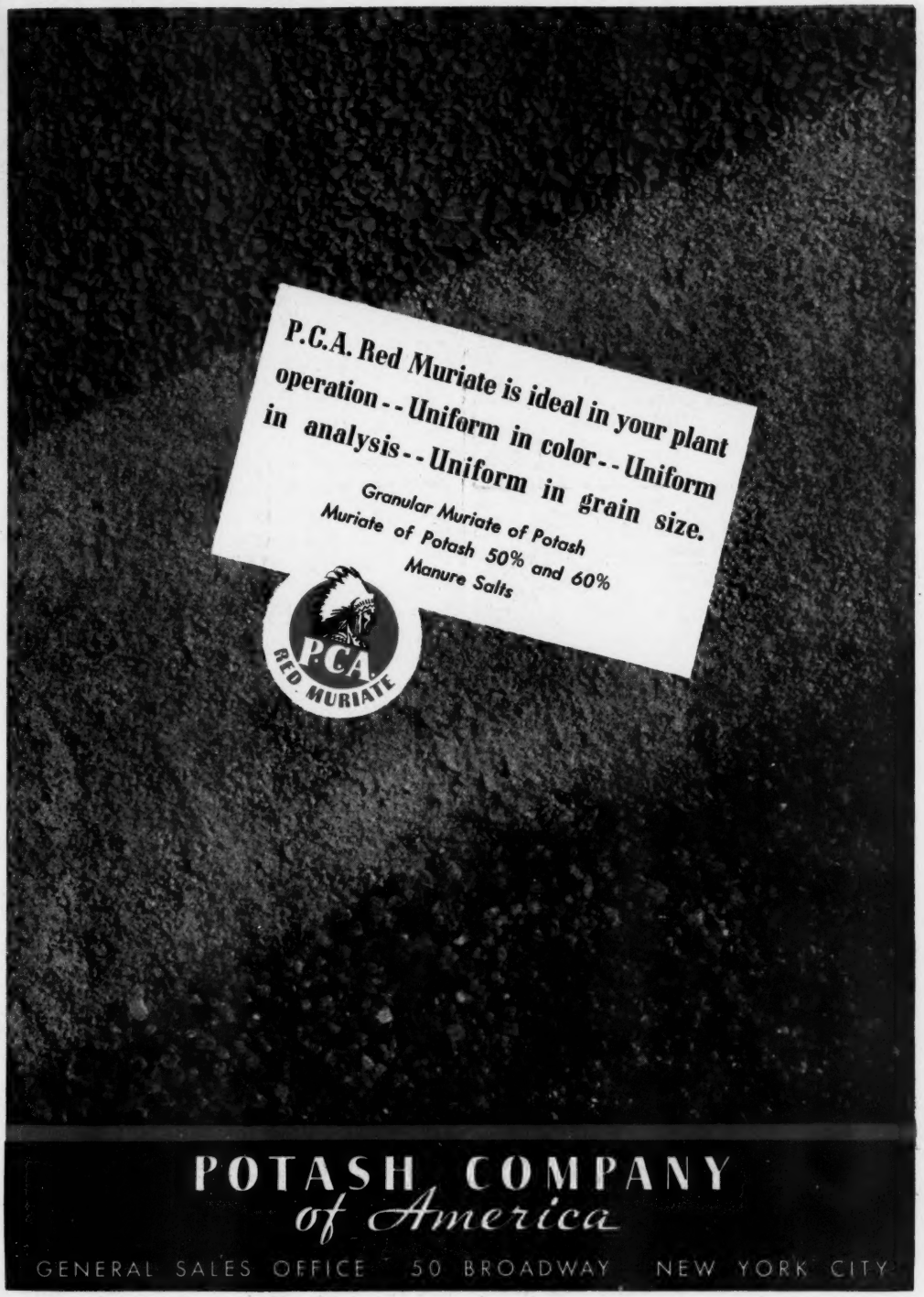
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